

# EUROSCHOOL ON EXOTIC BEAMS



Dubrovnik, Croatia, August 30 – September 5, 2015

## FIRST CIRCULAR

The production and use of energetic radioactive beams is a rapidly developing field in nuclear physics. Pioneering experiments are taking place, dedicated facilities are being commissioned and new facilities are planned. The aim of the EUROSCHOOL ON EXOTIC BEAMS is to introduce PhD students and young post-doctoral researchers to this field and also present recent experimental and theoretical advances. Each school consists of a number of lecture courses given by specialists in the field, starting from a basic level but also including more advanced seminars. Students are invited to contribute to school by presenting a poster and participating in practical sessions.

The Euroschool is an annual event initially funded by the EU and now supported by several funding agencies and large research facilities in Europe. The school started off based at Leuven, Belgium in 1993; since 2000 it has travelled around and was organized in various European cities (Jyväskylä - 2001, Les Houches – 2002, Valencia - 2003, Surrey - 2004, Mainz - 2005, Trento - 2006, Houlgate – 2007, Piaski – 2008, Leuven 2009, Santiago de Compostela – 2010, Jyväskylä – 2011, Athens – 2012, Dubna – 2013, Padova – 2014).

## SCHOOL BACKGROUND

More than 3000 different atomic nuclei have been synthesized in laboratory but these represent only a fraction of all possible nuclear species that are expected to exist in nature. The shortest-lived nuclei far from stability are labeled exotic because they cannot be found naturally occurring on Earth, and they are also difficult to produce experimentally. Even though they occur at the femtometer scale, exotic nuclei not only provide answers to fundamental scientific questions on the origin of the elements but they are also relevant for macroscopic applications in many areas: low-carbon energy generation; medical diagnosis and treatment; analysis for environmental, engineering, biomedical, geological and cultural studies; etc. The structure of nuclei far from stability can be investigated, in particular, by using radioactive ion beams (RIBs). The development of the first generation of RIB facilities has already opened up new possibilities to probe exotic nuclei. Future advances and access to new regions of the nuclear chart necessitate the advent of new RIB research infrastructure. Key questions addressed by experimental programs also require developing advanced theoretical methods, often coupled to innovative and high-performance computer simulation techniques that also find applications in other areas of science.

The **2015** edition of the EUROSCHOOL ON EXOTIC BEAMS will be organized in **Dubrovnik, Croatia**, at the Inter-University Centre (IUC) and will cover general topics on the physics of exotic nuclei, experimental and theoretical studies of nuclear structure and reaction dynamics, nuclear astrophysics and interdisciplinary applications.

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## LECTURERS and TOPICS

- Winfried Barth, GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt, Germany: *Linear accelerators for nuclear physics and applications*
- Milko Jakšić, Ruđer Bošković Institute, Zagreb, Croatia: *Modification and analysis of materials with ion beams*
- Horst Lenske, Justus Liebig University, Giessen, Germany: *Strangeness and nucleon resonances in nuclear matter*
- Matko Milin, University of Zagreb, Croatia: *Experimental studies of cluster states in light atomic nuclei*
- Take Saito, Johannes Gutenberg University Mainz, Germany: *Hyperons in nuclei*
- Olivier Sorlin, Grand Accélérateur National d'Ions Lourds (GANIL), France: *Nuclear forces and shell evolution*
- Mikhail Yavor, Saint-Petersburg State University, Russia: *Ion optics of spatially dispersing magnetic mass analyzers*

A more detailed program will follow in due course.

## VENUE

The EUROSCHOOL ON EXOTIC BEAMS 2015 will be held at the Inter-University Centre, Dubrovnik, Croatia, [www.iuc.hr](http://www.iuc.hr). Accommodation for students and lecturers will be arranged in the IUC dormitory and in the dormitory of a convent located next to the IUC.

Dubrovnik is a city on the Adriatic Sea coast in the extreme south of Croatia. The old completely walled fortress town of Dubrovnik is on the World Heritage List of UNESCO. The old town is one of the world's finest and best preserved medieval cities in the world.



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## Arriving to Dubrovnik by plane

From the Dubrovnik airport in Čilipi one can reach the city by taxi (the price is app. 250 kunas or approx. 35 Euros) or use a shuttle bus. The bus will first drive to the Pile area which is the also the location of the IUC and the dormitory. The bus ticket from the airport is 35 kunas or approx. 5 Euros.

## REGISTRATION

As from March 1, 2014

A link to the online application form will be available from March 1 onwards at the Euroschool website [www.euroschoolonexoticbeams.be](http://www.euroschoolonexoticbeams.be)

**The deadline for applications is May 15.**

In order to fulfill the goals of the School, the total number of participants has been limited to 60 and these will be selected from the pool of applicants by the Board of Directors (BoD).

You will receive a confirmation about your acceptance to the School. For some of you it might be necessary to obtain a visa to enter the country. Please start with this procedure as soon as you have received the confirmation of your acceptance. Invitation letters can be obtained from the Euroschool secretary at [Euroschool@kuleuven.be](mailto:Euroschool@kuleuven.be).

## REGISTRATION FEE

Your registration will only become final after payment of the registration fee, which amounts to 150 Euro per student. This fee includes breakfasts and lunches during the school, the excursion, the welcome reception and the social dinner. All other expenses will have to be borne by yourself.

A limited number of travel grants are available after motivated request. In order to apply, please fill in the application form available on the website.

## Scientific Committee of the Euroschool (BoD):

- Dolores Cortina-Gil, Universidade de Santiago de Compostela, Spain
- Héloïse Goutte, CEA DSM, Saclay, France
- Sotirios Harissopulos, NCSR "Demokritos", Athens, Greece
- Ari Jokinen, University of Jyväskylä, Finland
- Silvia M. Lenzi, University of Padova and INFN, Italy

# EURO SCHOOL ON EXOTIC BEAMS



- Gerda Neyens, KU Leuven, Belgium
- Marek Pfützner, University of Warsaw, Poland
- Andrey Popeko, JINR, Dubna, Russia
- Christoph Scheidenberger, GSI, Darmstadt, Germany (Chair)
- Dario Vretenar, University of Zagreb, Croatia
- Fabienne Vanalphen, KU Leuven, Belgium (Secretary)

The email address for the School is: [euroschool@kuleuven.be](mailto:euroschool@kuleuven.be)

We look forward to meeting you in Dubrovnik.